

Technical Guide

Preliminary
Plasma Display Television

GP8DU Chassis

Panel Replacement Procedure



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National Training Center

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 Warning

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Objective

This disassembly procedure assists the technician in disassembling a defective Plasma Display television. It shows a complete service procedure broken down into three steps:

1. Complete removal of the printed circuit boards and the defective plasma panel from the chassis assembly.
2. Lead dressing
3. Adjustment of critical voltages and picture settings

The example unit shown in the guide is a TH-42PX50U but the procedures listed here are similar for other models of the GP8DU and GP8H DU chassis.

Equipment List:

1. Electric Screwdriver (Part # EY6220B or equivalent)
2. Digital Volt Ohmmeter
3. Oscilloscope
4. Anti-static 5 foot by 4 foot foam cushioning
5. Plasma Stand
6. Screw storage bin
7. Large flat work area
8. Isolation Transformer
9. Colorimeter for white balance adjustment (Sencore CP5000 or equivalent)
10. A Video Signal Generator capable of providing NTSC, 480i, 480p, 720p, 1080i and PC with adjustable brightness levels. (Sencore VP300 or equivalent)

Panel Handling Precautions

Plasma Display Panels use a high voltage power supply, disconnect the AC from the unit and wait one minute for the voltage to dissipate.

Use extreme care when servicing the Plasma Display Panel. The glass used in the plasma panel is thin, and its structure is extremely susceptible to impact. Rough handling of the unit can crack the glass or cause pixel defect errors. Be sure to transport the Panel in the upright position, the unit is designed to absorb force vertically not horizontally.

Numerous flexible printed leads with extremely soft structure are used around the panel. Be very careful during handling not to damage these by pulling, bending or subjecting them to excessive force. When inserting a ribbon cable into a socket, verify that the cable is straight; angled insertion can create an electrical short circuit.

Anti-static measures should be applied, especially when connecting and disconnecting the ribbon cables.

A protective sheet is attached to the back of the replacement panel to prevent scratches and accumulation of debris. Be sure to remove the protective sheet and wipe the surface with a soft cloth before installation.

A low torque setting is recommended when installing screws in the panel assembly.

Preparation of the new Panel

1. The replacement panel is shipped in a special shipping crate; retain this crate to return the defective panel.



Figure 1. Panel Shipping Crate

2. Carefully remove the top of the crate, remember you will have to reuse the crate to return ship the defective panel. Slide the panel out the opened end.



Figure 2. Removal of Panel from crate

3. The replacement panel is packed in an escutcheon frame and a cardboard panel. Protective cushioning surrounds the panel. These items must be saved and used to return the defective panel.

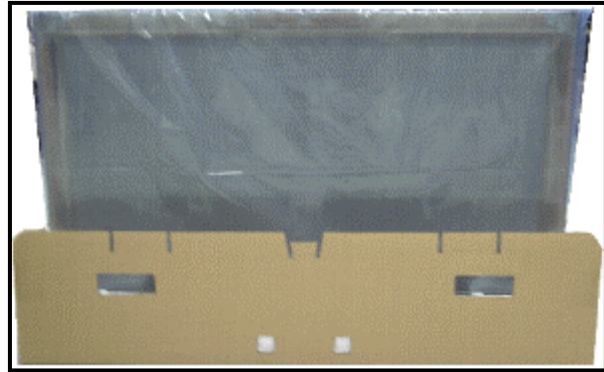


Figure 3. Packing of the Panel

Caution: Use extreme care when handling the Plasma Display Panel. The glass used in the plasma panel is thin, and its structure is extremely susceptible to impact. Therefore it is recommended that two individuals handle the Plasma Display Panel to avoid accidental damage.

4. Remove the four screws that secure the protective cardboard on the new panel. Place the protective cardboard aside.

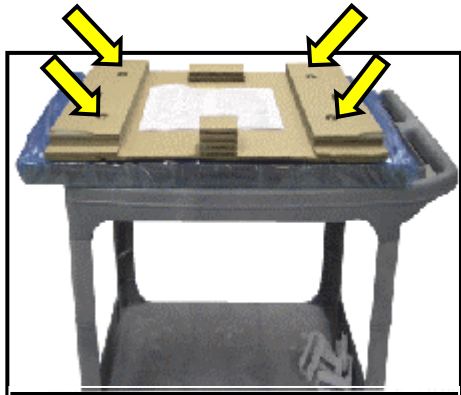


Figure 4. Panel on Table



Figure 5. Cardboard Removal

5. Unwrap the protective packaging from the new panel.

Important Note:

The new panel comes with the C1 - C4 boards preinstalled. However, the lead cables that connect C1 to C2 and C3 to C4 might be missing. Check for board jumpers. If missing, remove and transfer to the new panel.



Figure 6. Unwrapping the Panel

Removal of the Defective Chassis PC Boards

Rear Cabinet Removal

Remove the 43 screws as indicated in Figure 7, and then pull away the rear cover. Place it in a secure location.

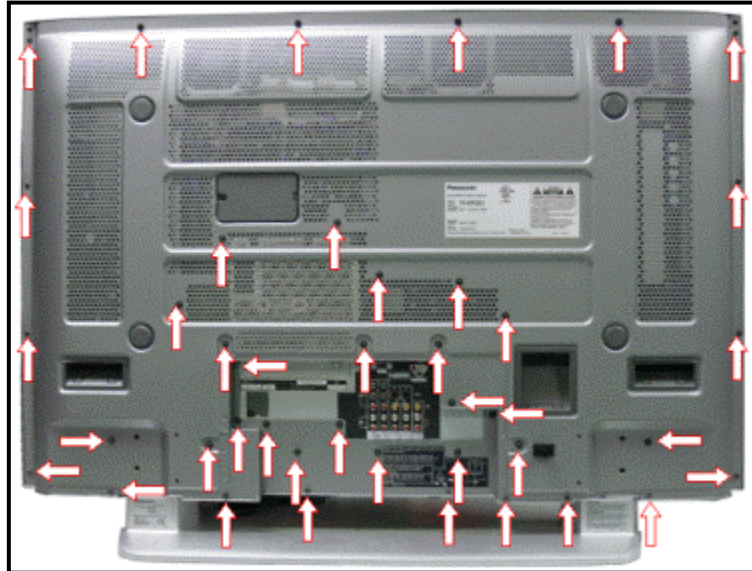


Figure 7. Back Cover Screws

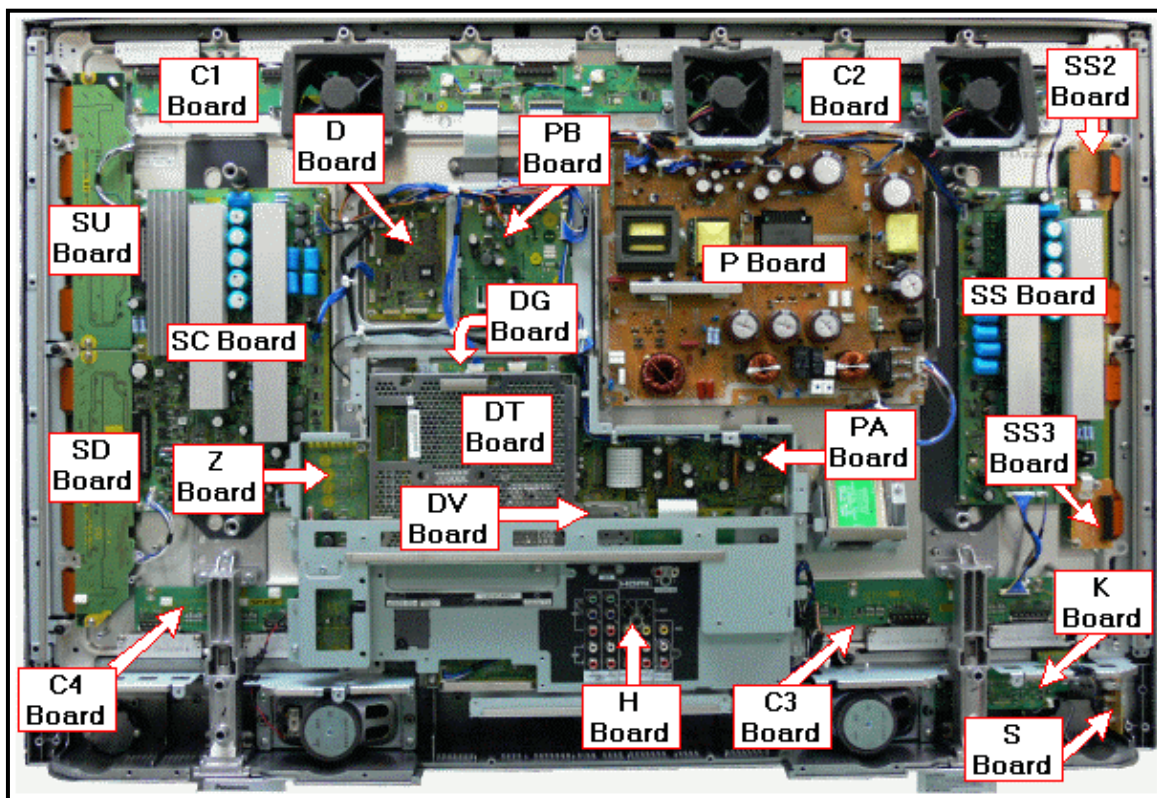


Figure 8. Board Layout

Board Description

Note: The boards are listed in sequential order for quick removal.

Board Name	Function	Board Name	Function
1 P	Power Supply	6 SD	Scan out (Down)
2 PB	Audio Power, Fan Control	7 SC	Scan Drive
3 D	Format Converter, Plasma AI Processor	8 SS2	Sustain Connector (Up) (42 inches only)
4 PA	DC-DC Converter, Power SOS	9 SS3	Sustain Connector (Down) (42 inches only)
4 H	AV Terminal, AV Switch	10 SS	Sustain Drive
4 DT	ATSC Interface	11 C1	Data Driver (Up Left)
4 DV	HDMI Interface	14 C4	Data Driver (Down Left)
4 DG	Digital Signal Processor	K	Remote receiver, Keyscan
4 Z	Speaker out, Audio AMP	S	Power Switch
5 SU	Scan out (Up)		

Table 1. Board Description

Disassembly and Reassembly Procedure

Caution: Wait 1 minute for the electrolytic capacitors to discharge before removing any PCB from the unit.

Removal of the fans

1. Unlock the cable clampers of the fans to free the cables.
2. Disconnect the connectors PB31, PB33, and PB34 from the PB board.
3. Remove the three screws that secure each of the three fans.
4. Place the fans in a secure location

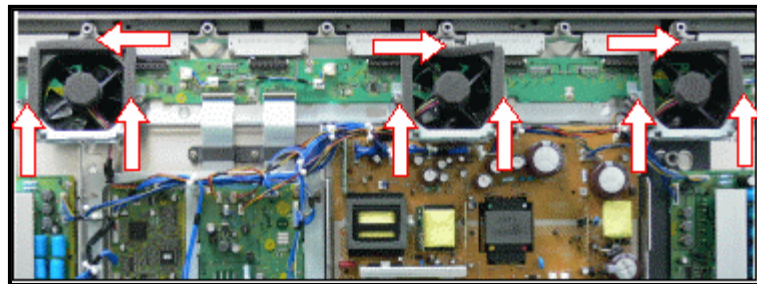


Figure 9. Fans Location

Removal of the metal frame

1. Unlock the cable clampers to free the cable.
2. Disconnect the speaker connectors (SP-L and SP-R) and the black connector that couples the K board and the DG board.
3. Disconnect the connectors DG3 and DG5 of the DG board, PB7 of the PB board and PA10 of the PA board.
4. Remove the five screws that hold the metal frame as indicated in figure 10.
5. Remove the metal frame and place it aside.

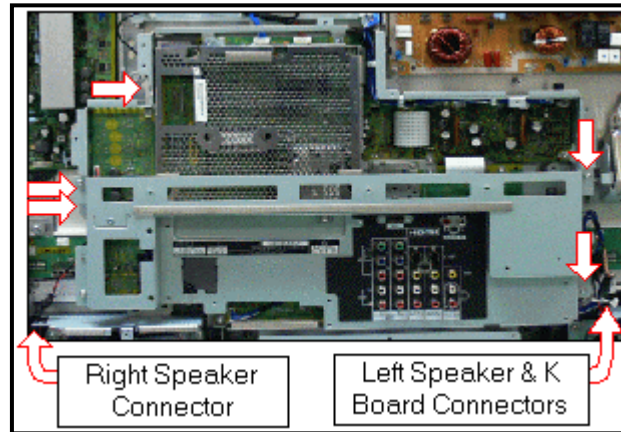


Figure 10. Metal Frame

Note: The metal frame contains the Z, DT, H, DG, and PB boards.

Removal of the power supply board (P board)

1. Unlock the cable clampers to free the cables.
2. Disconnect the couplers (P2, P5, P9, P10, P11, P12, P23, P25 and P30) from the P board.
3. Remove the six screws as indicated in Figure 11.
4. Installation of the P board will be performed later.

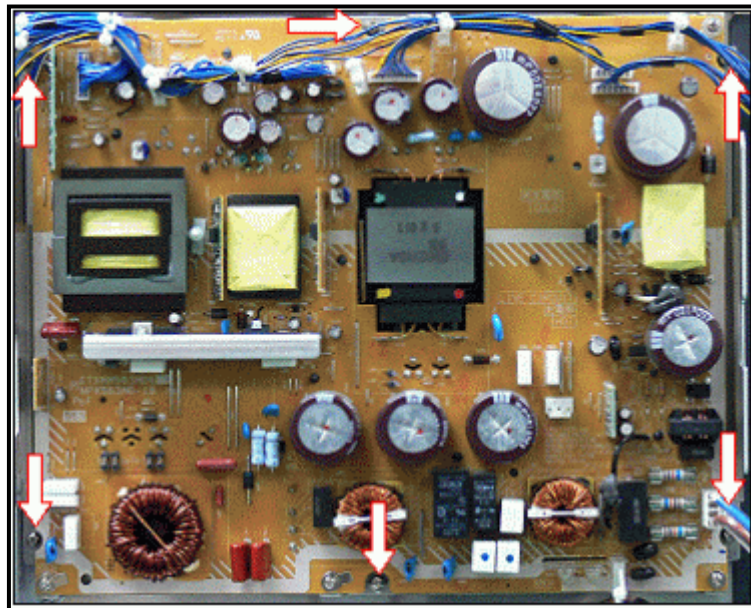


Figure 11. P Board

Removal of the PB board and metal frame

1. Unlock all the cable clampers of the PB board metal frame to free the cables.
2. The connector PB7 is already disconnected from the PB board. The connectors (PB30, and PB5) are already disconnected from the P board.
3. Disconnect the connectors D20 and D25 from the D board. The connectors D3 and D5 are already disconnected from the DG board.
4. Remove the three screws as indicated in Figure 12 and remove the PB-Board metal frame. The PB board remains attached to the metal frame.
5. Place the PB board and metal frame aside.

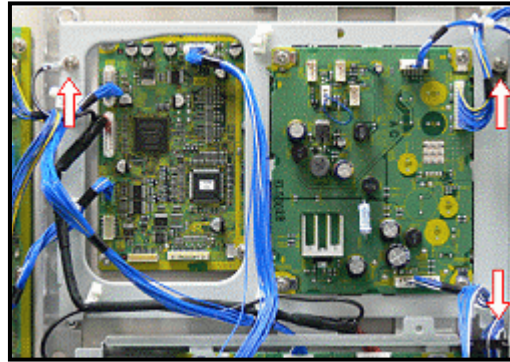


Figure 12. PB Board Metal Frame

Removal of the D board

1. Disconnect the flexible cables (D31, D32, D33 and D34).
2. Remove the four screws of the D board as indicated in figure 13 and place the D board aside.

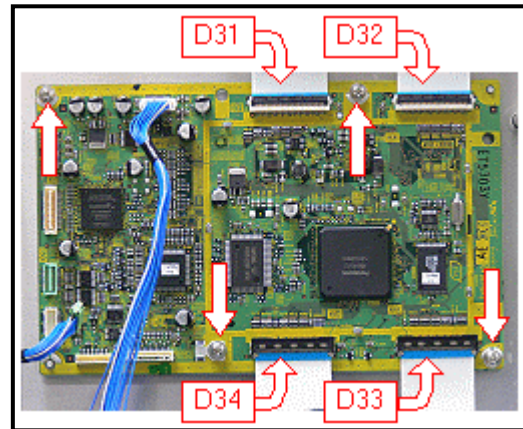


Figure 13. D Board

Transferring the SU-Board

1. Remove the 2 screws of the SU board as indicated in figure 14.
2. Disconnect the bridge connector (SU45 or SC45) and slide the SU-board to the left to disconnect the coupler (SC41 -SU41) from the SC board.
3. Remove the flexible cables (SU1, SU2, SU3, SU4) and place the SU board aside. Installation is performed after the removal of the SC board.

Transferring the SD-Board

1. Remove the two screws of the SD board as indicated in figure 14.
2. Disconnect the bridge connector (SD46 or SC46) and slide the SD board to the left to disconnect from the coupler (SC42 -SD42) on the SC board.
3. Remove the flexible cables (SD1, SD2, SD3, SD4) connected to the SD-Board, and place the SD board aside. Installation is performed after the removal of the SC board.

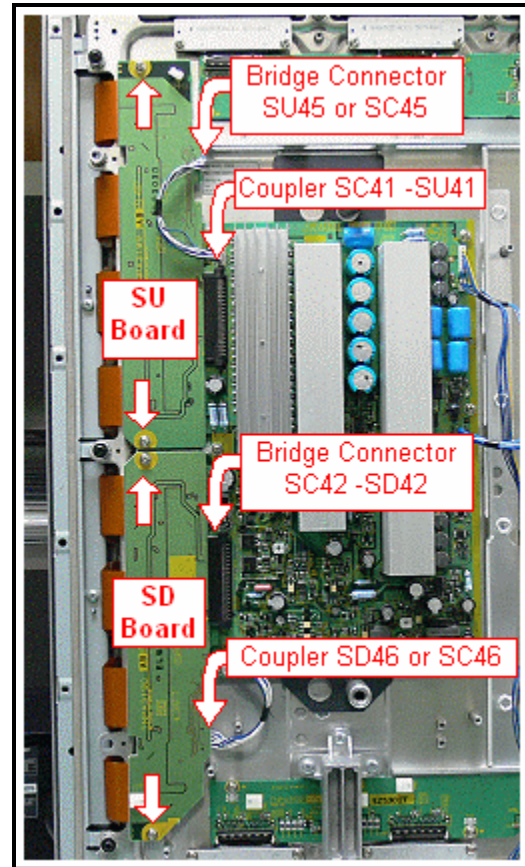


Figure 14. SU and SD boards

Transferring the SC-Board (37, 42inch)

1. Disconnect from adjoining boards any cable that originates from the SC board.
2. Remove the six screws that attach the SC board to the panel. Place the SC board aside.
3. Remove the rubber insulator located underneath the SC board and transfer it to the new panel.
(See figure 16.)
4. Transfer the SC-Board to the new panel.
5. Connect the flexible cables (SU1, SU2, SU3, SU4) to the SU board and slide the SU board to the right into the coupler (SC41) of the SC-Board.
6. Connect the flexible cables (SD1, SD2, SD3, SD4) to the SD board and slide the SD board to the right into the coupler (SC42) of the SC-Board.
7. Install the screws that secure the SD and SU boards to the new panel.

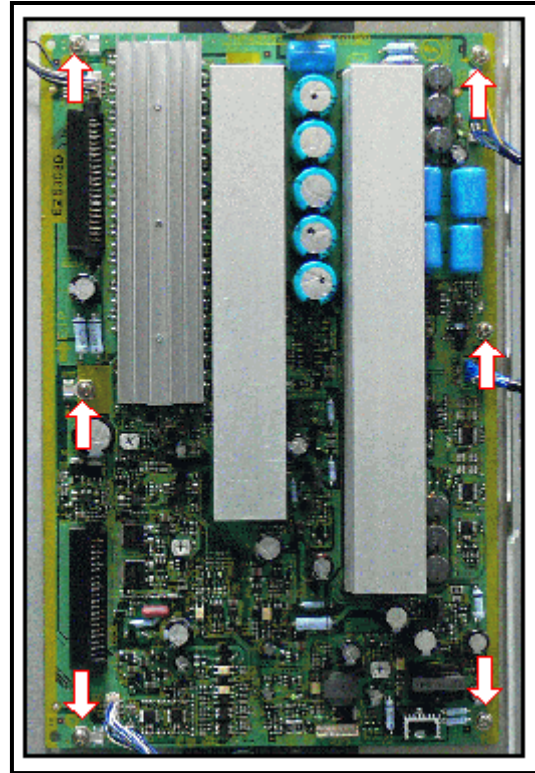


Figure 15. SC Board

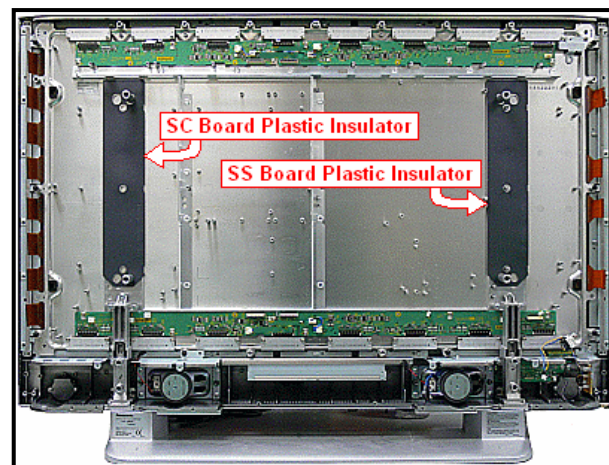


Figure 16. Rubber Insulator

Transferring the SS2-Board

1. Disconnect the coupler (SS23) from the SS2 board.
2. Disconnect the flexible cable (SS55). See figure 17 and 17B.
3. Remove the two screws that attach the SS2-Board to the panel.
4. Place the SS2 board aside. Installation is performed after the removal of the SS board.

Transferring the SS3-Board

1. Disconnect the coupler (SS22) from the SS3 board.
2. Disconnect the flexible cable (SS56). See figure 17 and 17B.
3. Remove the two screws that attach the SS3-Board to the panel.
4. Place the SS3 board. Installation is performed after the removal of the SS board.

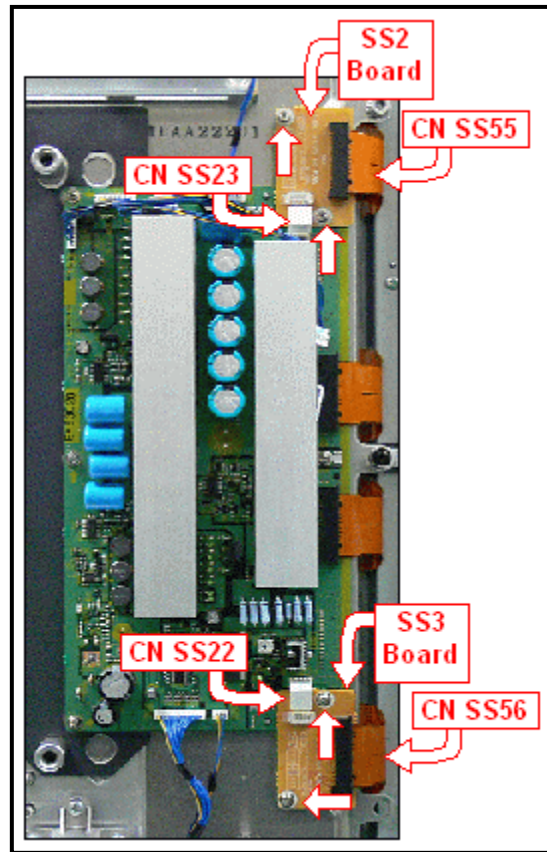


Figure 17. SS2 and SS3 boards

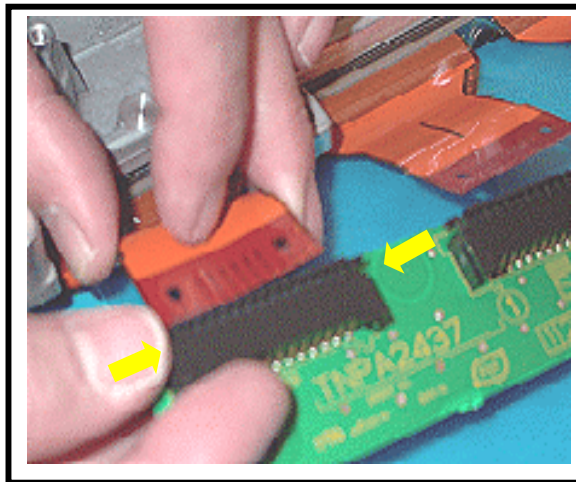


Figure 17B. SS Board Connector

Transferring the SS-Board

1. Disconnect the connector C24 from the C2 board.
2. Disconnect the connector C32 from the C3 board.
3. Disconnect the connector SS34 from the SS board.
4. Disconnect the flexible cables (SS52, and SS53) from the SS board.
5. Remove the six screws that hold the SS board in place and place the SS board aside.

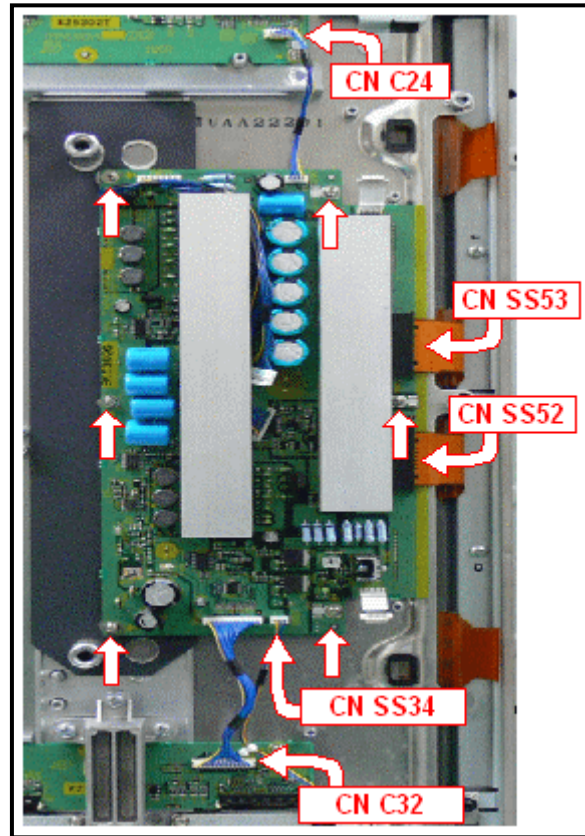


Figure 18. SS Board

6. Remove the rubber insulator located underneath the SS board and transfer it to the new panel. (See figure 19.)
7. Transfer the SS board to the new panel.
8. Reinstall the SS2 and SS3 boards.

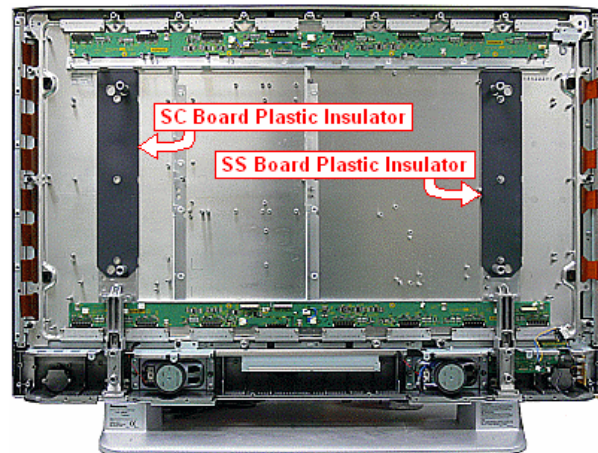


Figure 19. Rubber Insulator

Transferring the AC Inlet

1. Remove the two screws that attach the AC inlet to the panel as indicated in figure 20.
2. Transfer the AC inlet to the new panel.

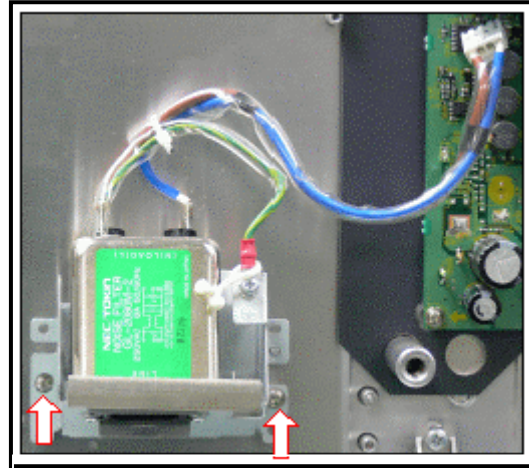


Figure 20. AC Inlet

Installation of the power supply board (P board)

5. Unlock the cable clampers to free the cables.
6. Connect the couplers (P2, P5, P9, P10, P11, P12, P23, P25 and P30) to the P board.
7. Mount the six screws as indicated in Figure 21.

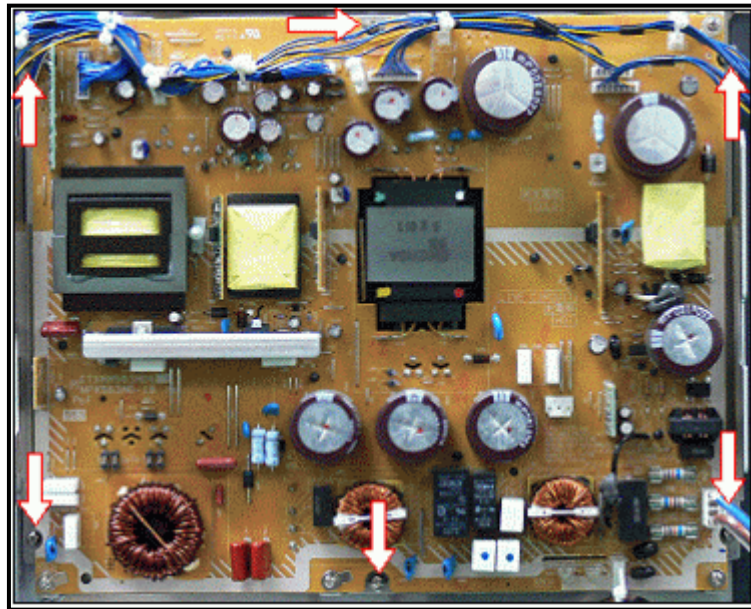


Figure 21. P Board

Transferring the C1 and C2 Boards flexible ribbon cable assembly

1. Remove the three screws of the cable bracket.
2. Unlock the sockets C11 and C21 to disconnect the two ribbon cables that attach the D board to the C1 and C2 boards.
3. Install the flexible cables and bracket to the new panel.
4. Remove the lead cable that is connected between the socket C12 and C22 of the C1 and C2 boards. Transfer the cable to the new panel.

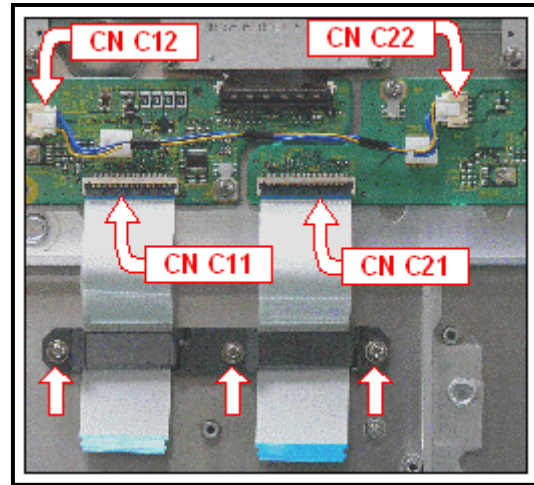


Figure 22. Upper C Boards Flex Cables

Note: The new panel comes with preinstalled C boards.

Note: Reinstallation of the ribbon cables into a socket requires special care. Verify that the cable is straight; angled insertion can create an electrical short circuit.

Removal of the C3 and C4 Boards flexible ribbon cable (HD Models Only)

1. Remove the three screws that attach the angle bracket to the panel.
2. Remove the two screws that attach the metal plate to the panel.
3. Unlock the sockets C41 and C11 to disconnect the two flexible cables that attach the D board to the C3 and C4 boards.
4. Remove the lead cable that is connected between the sockets C33 and C43 of the C3 and C4 boards. Transfer the flexible cable, bracket, and metal plate to the new panel.

Note: Pay careful attention when connecting the ribbon cables to the

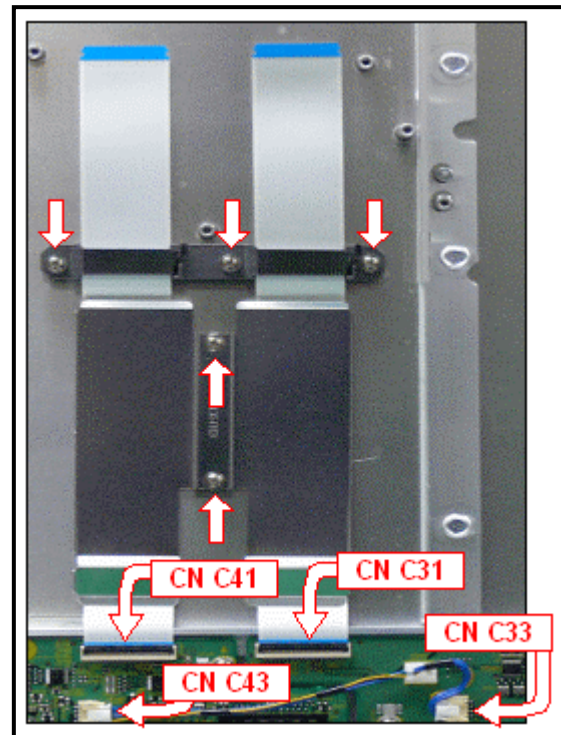


Figure 23. Lower C Boards Flex. Cables

D board and the C boards. Verify that the cable is straight; angled insertion can create an electrical short circuit.

Removal of the front cabinet from the plasma display panel

1. Remove the 8 screws as indicated in figure 24.

Note: The metal plate at the bottom left side of the picture automatically falls off when the screws are removed. Place it aside for installation into the new panel.

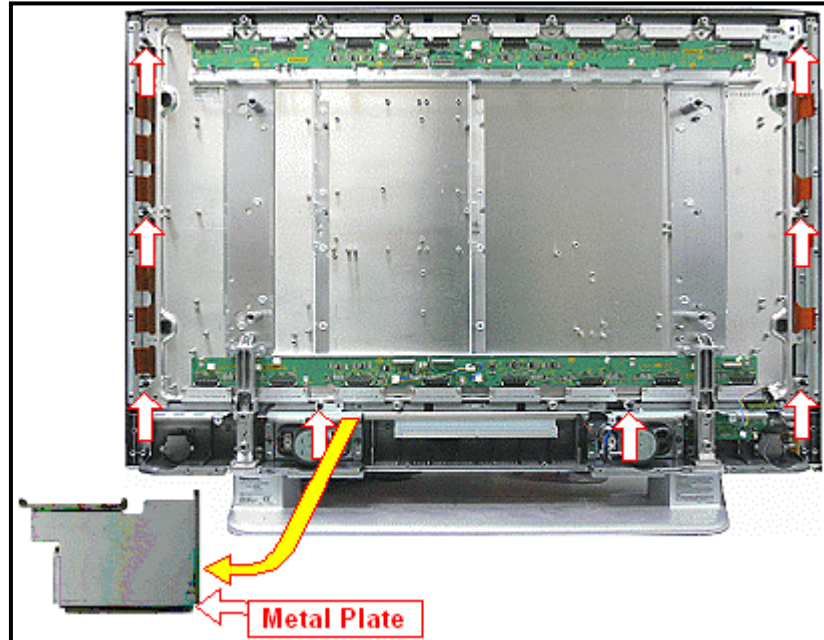


Figure 24. Removal of Front Escutcheon

2. Remove the three screws of the right stand bracket as indicated in figure 25.
3. Disconnect the connector S1 of the S board.
4. Free the cable from the retainers.

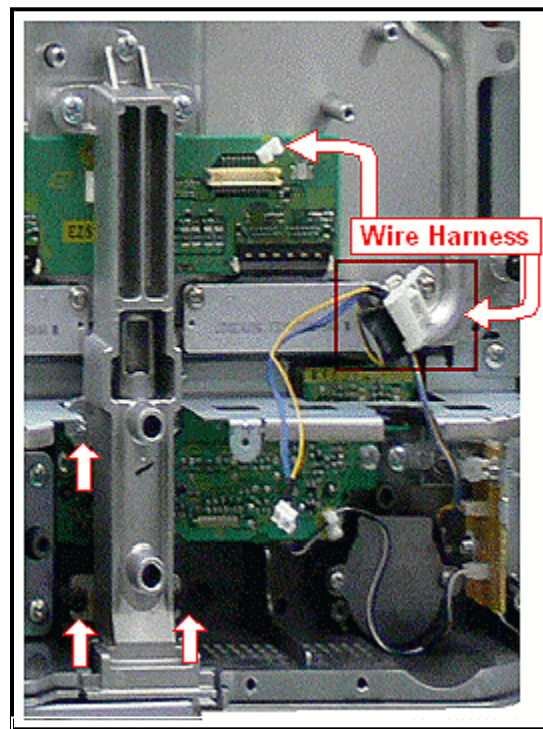


Figure 25. Right Stand Bracket

5. Remove the three screws of the left stand bracket as indicated in figure 26.

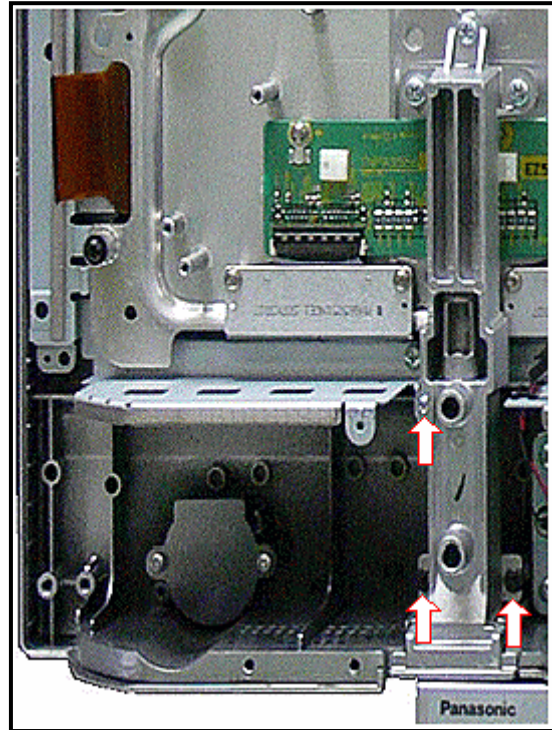


Figure 26. Left Stand Bracket

6. Make sure all the wiring connected to the front panel is unattached.
7. With the help of an assistant, the Cabinet can now be removed from the panel by tilting the bottom out and lifting up slightly. Place it in a secure location.



Figure 27.
Escutcheon Removal

Removal of the Panel from the stand

With the help of an assistant, remove the plasma panel from the servicing stand. Lay it, facing down, on a flat surface such as a table covered with a cushioned anti-static mat, and a soft cloth to avoid scratching the glass.

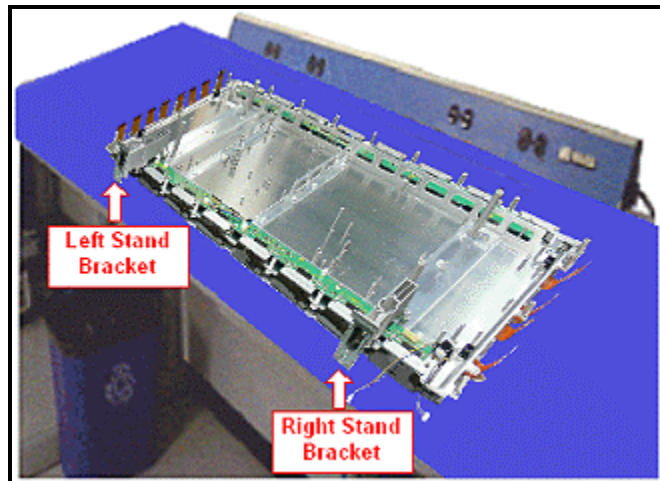


Figure 28. Panel on Table

Removal of the stand brackets

Note: Perform this task only after removing the plasma television from the stand. The television should be placed face down on a table equipped with a cushioned anti-static mat and a soft cloth.

1. Remove the 4 screws securing the left stand bracket.
2. Repeat the procedure for the right stand bracket.
3. Transfer the stand brackets to the new panel.

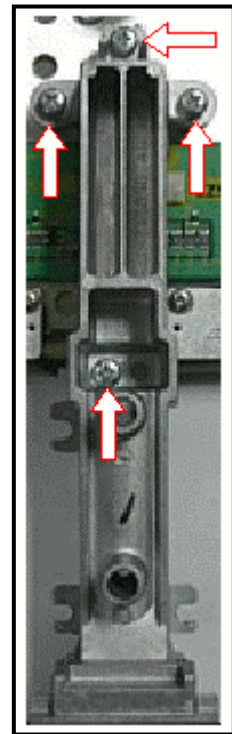


Figure 29. Stand Bracket

Installation of the D board

1. Install the D board to the new panel and secure it with 4 screws.
2. Connect the flexible cables (D31, D32, D33 and D34).

Note: Reinstallation of the ribbon cables into a socket requires special care. Verify that the cable is straight; angled insertion can create an electrical short circuit.

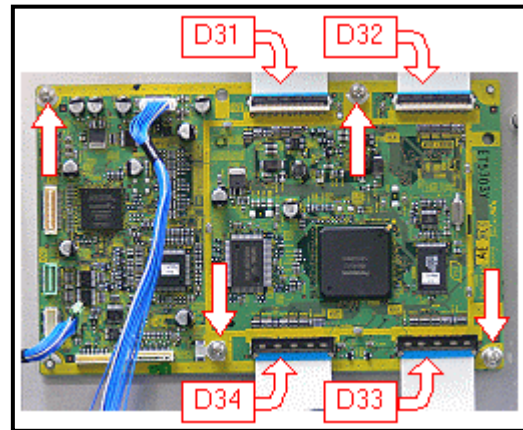


Figure 30. D Board

Installation of the PB board and metal frame

1. Install the PB-Board metal frame and secure it with three screws as indicated in Figure 31.
2. Connect the connector PB7 to the PB board.
3. Connect the connectors (D3, D5, D20, and D25) to the D board.
4. Route the lead cables through the cable clampers. Lock the cable clampers.

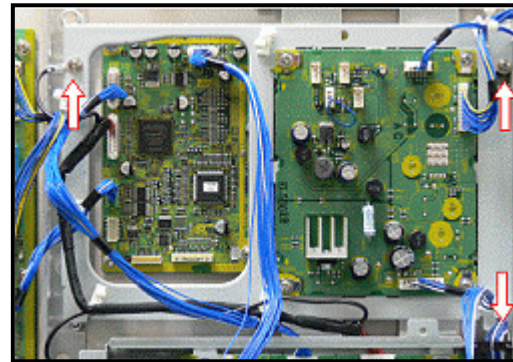


Figure 31. PB Board Metal Frame

Installation of the metal frame

1. Install the metal frame and secure it with it with 5 screws.
2. Connect the speaker connectors (SP-L and SP-R) and the black connector that couples the K board and the DG board.
3. Connect the connectors DG3 and DG5 of the DG board, PB7 of the PB board and PA10 of the PA board.
4. Route the cables through the clampers. Fasten the clampers.

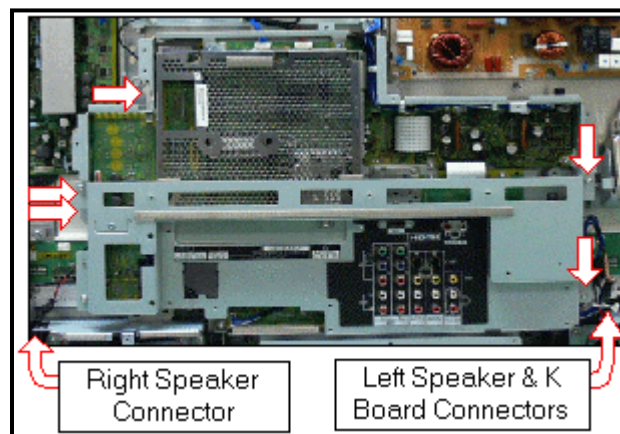


Figure 32. Metal Frame

Installation of the front escutcheon

1. Verify that the front Escutcheon cover and the panel are free of dust and fingerprints.
2. Install the front escutcheon cover by tilting the bottom away from the panel and then pushing down from the top. Once the top is secured, push the bottom in to lock it in place.

Caution: If the top is not tightly pushed down from the top and held securely in place, pushing the bottom in can cause the bottom edge to cut the bottom ribbon cables.

3. Secure the escutcheon with two screws on the left and right sides.
4. Connect the connector S1 to the S board.



Figure 33. Escutcheon Install

5. Install the three screws of the right stand bracket as indicated in figure 34.

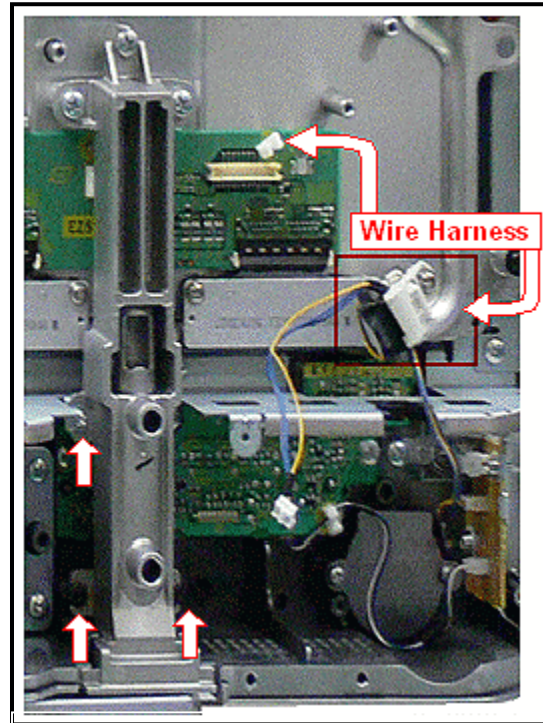


Figure 34. Right Stand Bracket

6. Install the three screws of the left stand bracket as indicated in figure 35.

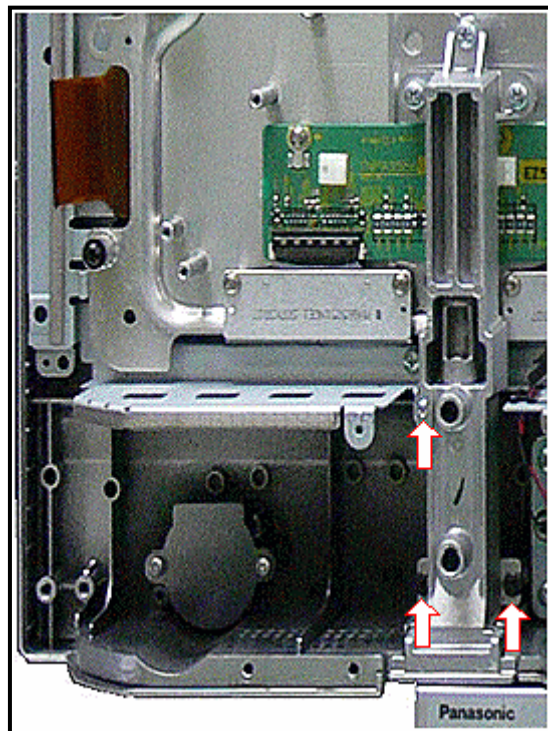


Figure 35. Left Stand Bracket

Installation of the fans

1. Secure the three fans using the three mounting screws with rubber bushings.
2. Connect the connectors PB31, PB33, and PB34 from the PB board.
3. Route the lead cables through the cable clampers. Fasten the clampers.

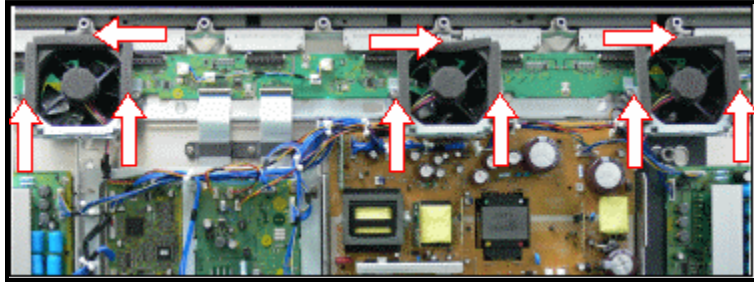


Figure 36. Fans Location

Note: Defective Panels are considered hazardous waste please follow the disposal instructions included with the replacement panel.

Lead Dressing

TH-42PX50U

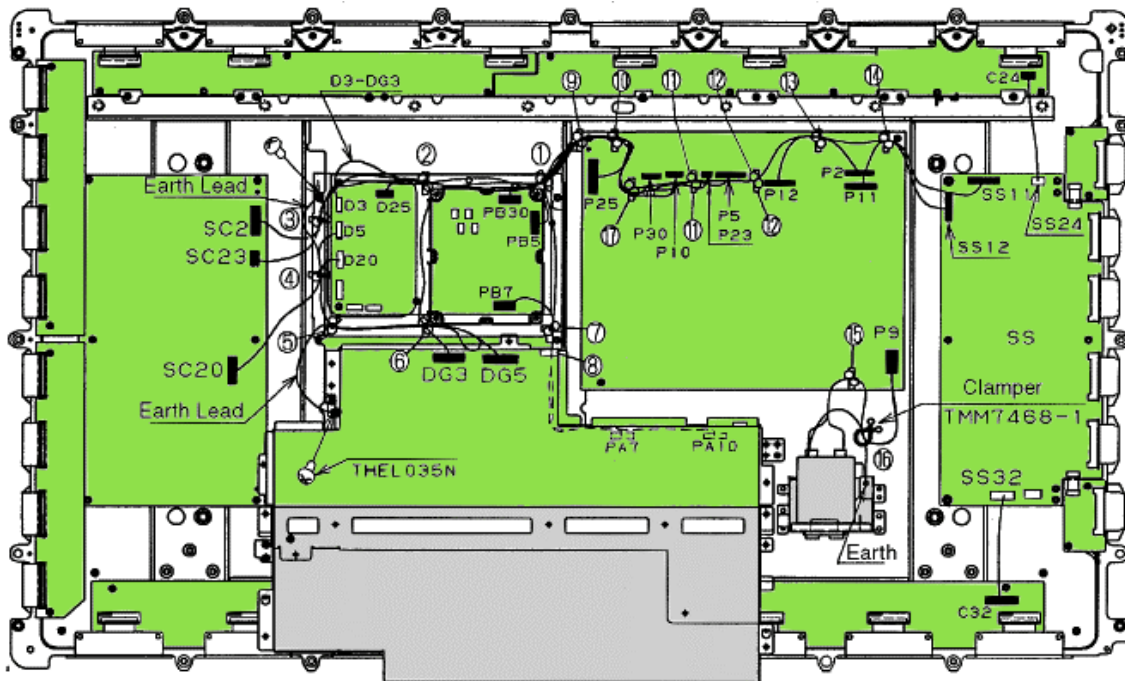


Figure 37. Lead Dressing Location

Connector Connection:

P2, P5, P9, P10, P11, P12, P23, P25, P30

D3, D5, D25

PB5, PB7, PB30

SC2, SC20, SC23,

SS11, SS12

DG3, DG5

C24, C32

CON : No. — CON : No.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰
SC2 — P2	○	○							○	○	○	○	○				○
SC23 — P23	○	○							○	○	○						○
SC20 — D20				○													
DG3 — D3		○				○											
DG5 — D5 TUNER EARTH				○	○	○											
					○	○											
D25 — P25	○	○							○	○							
PB5 — P5	○								○	○	○						○
PA7 — PB7							○	○									
PA10 — P10	○						○	○	○	○							○
SS11 — P11														○			
SS12 — P12													○	○			
AC INLET — P9															○	○	
PB30 — P30	○								○	○							○

Table 3. Lead Dressing

Lead Dressing 2

TH-42PX50U

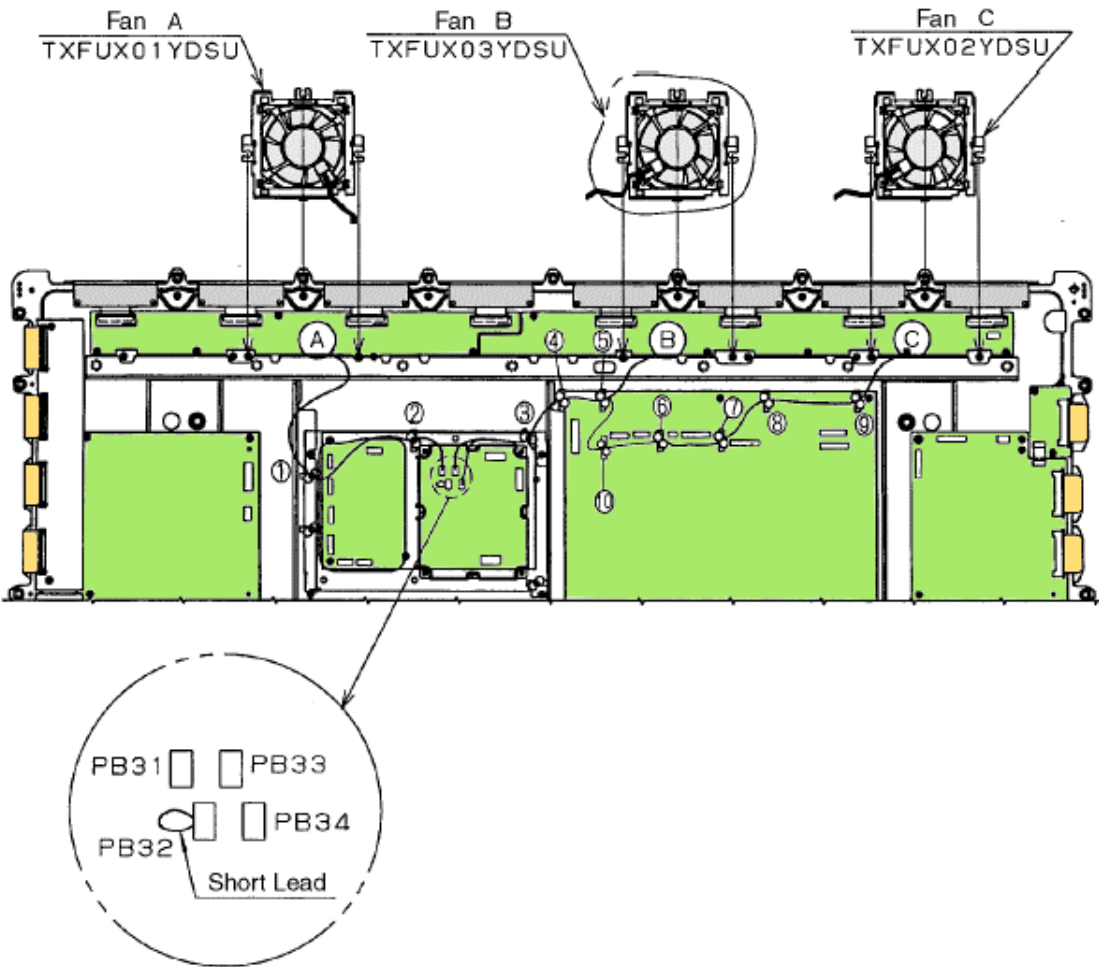


Figure 38. Lead Dressing 2

Connector Connection:

PB31, PB33, PB34

CON:NO.	CON:NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
FA A	PB31	○	○								
FA B	PB33			○	○	○					
FA C	PB34			○	○	○	○	○	○	○	○

Table 4. Lead Dressing 2



Figure 39. Example of Lead Dressing

Figure 39 shows an example of harness with a triple wound clammer.

Additional Information for 37 and 50-inch Models

Standard definition 37 and 42-inch screens as well as 50-inch high definition screens have differences that require slightly different techniques in disassembly and reassembly. Please refer to the appropriate service manual for lead dressing instructions.

Adjustments

Driver Set-up

Item / Preparation

Input an APL 100 % white signal.

Set the picture controls to:

Picture mode = Normal

White Balance = Cool

Aspect = 16:9

Panel Label information

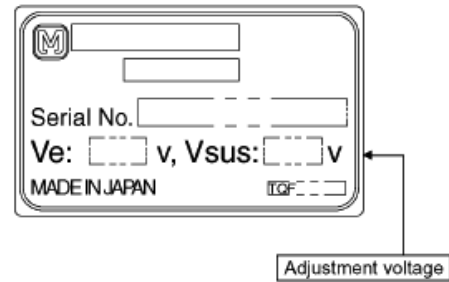


Figure 40. Panel Label

Note: To perform the following adjustments, please refer to the panel information label located on the heat sink of the panel. See Figure 40 for more information about the panel label.

TH-42PX50U			
Name	Test point	Voltage	Volume
Vsus	TPVSUS (SS-BOARD)	188V $\pm$ 2V*	VR351 (P-BOARD)
Ve	TPVE (SS-BOARD)	160V $\pm$ 1V*	VR6145 (SS-BOARD)
Vset	TPVSET (SC-BOARD)	240 V $\pm$ 7V	Verify Only
Vad	TPVAD (SC-BOARD)	-105V $\pm$ 1V	VR6477 (SC-BOARD)
Vda	TPVDA (SS Board)	70V $\pm$ 1V	Verify only
VSCN	TPVSCN (SC-BOARD)	Vad+130V $\pm$ 4V	Verify only
VDAT	P12_Pin 2, 5	70V $\pm$ 1V	Verify only
* Refer to the panel label for the exact value			

Table 5. TH-42PX50 Adjustment Values

TH-50PX50U			
Name	Test point	Voltage	Volume
Vsus	TPVSUS (SS-BOARD)	176V $\pm$ 2V*	VR351 (P-BOARD)
Ve	TPVE (SS-BOARD)	150V $\pm$ 1V*	VR6250 (SS-BOARD)
Vset	TPVSET (SC-BOARD)	225V $\pm$ 7V	Verify Only
Vad	TPVAD (SC-BOARD)	-90V $\pm$ 1V	VR6801 (SC-BOARD)
Vda	TPVDA (SS Board)	75V $\pm$ 1V	Verify only
VSCN	TPVSCN (SC-BOARD)	Vad+130V $\pm$ 4V	Verify only
VDAT	P12_Pin 2, 5	75V $\pm$ 1V	Verify only
* Refer to the panel label for the exact value			

Table 6. TH-50PX50U Adjustment Values

Initialization Pulse Adjustment

Item / Preparation

Input a Crosshatch signal.

Set the picture mode to Normal, and White Balance to Normal

Adjustments

Adjust the indicated test point for the specified waveform. Use test point TPSS1 of the SS board as the trigger source.

	Test point	Volume	Level	Remark
T1	TPSC1 (SC)	---	$10 + 10 / -5\mu \text{ Sec}$	TH-42PX50U
		---	$20 \pm 15\mu \text{ Sec}$	TH-50PX50U
T2	TPSC1 (SC)	VR6557 (SC)	$210 \pm 10\mu \text{ Sec}$	TH-42PX50U
		VR6602 (SC)	$155 \pm 10\mu \text{ Sec}$	TH-50PX50U

Table 7. Initialization Pulse Values

Drive Waveform

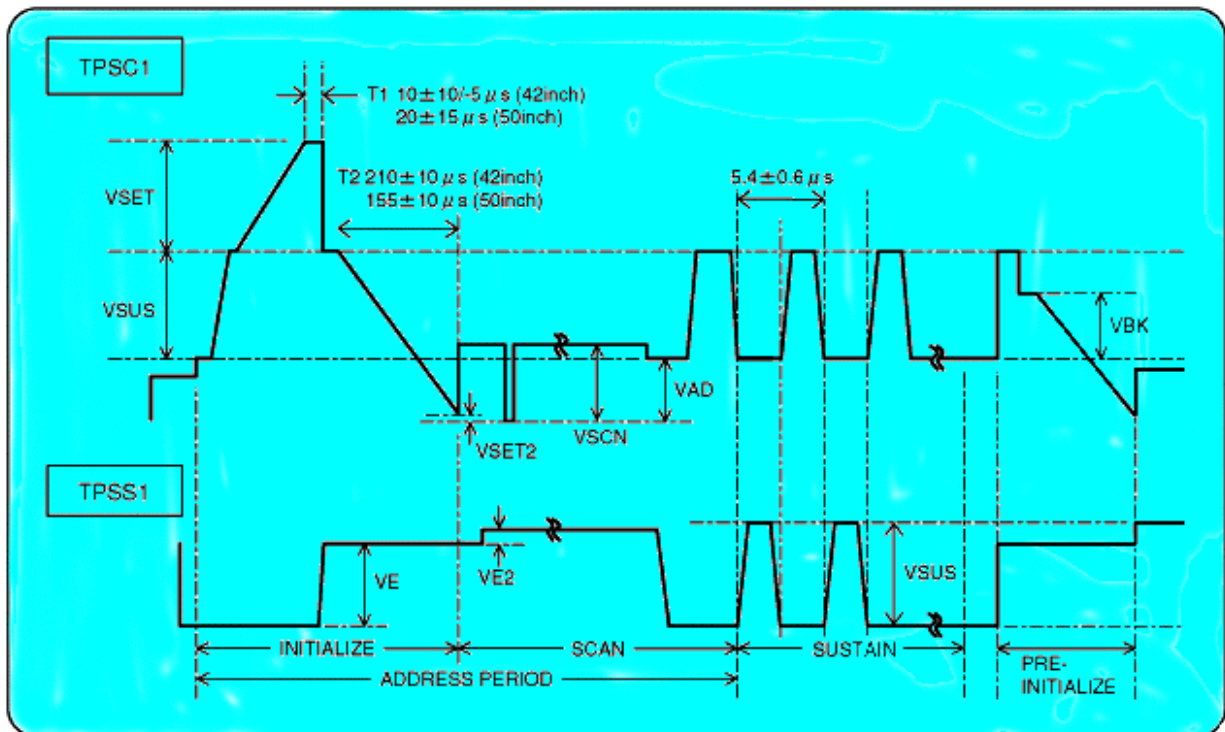
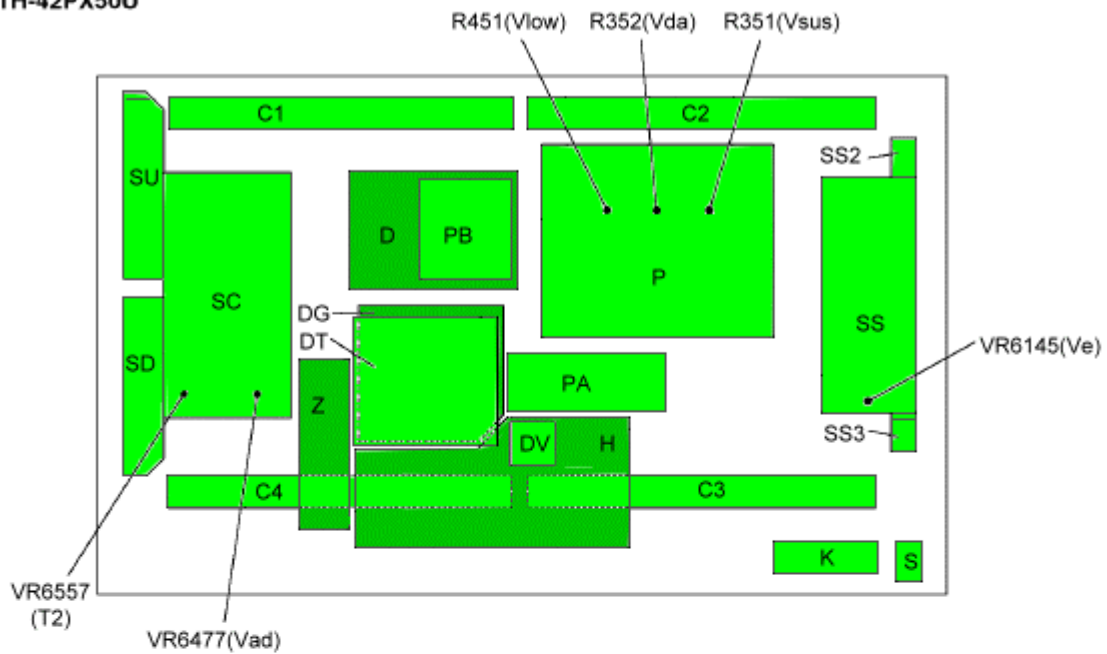


Figure 41. Initialization Waveform

Adjustment Volume Locations

TH-42PX50U



TH-50PX50U

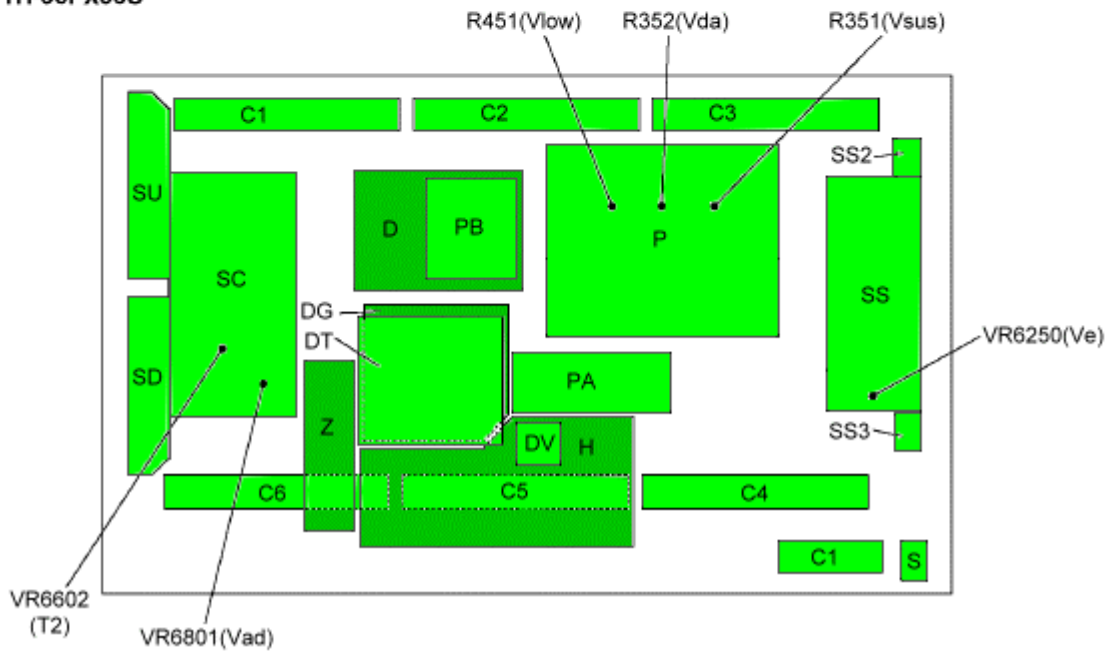


Figure 42. Adjustment Volume Location

Test Point Locations

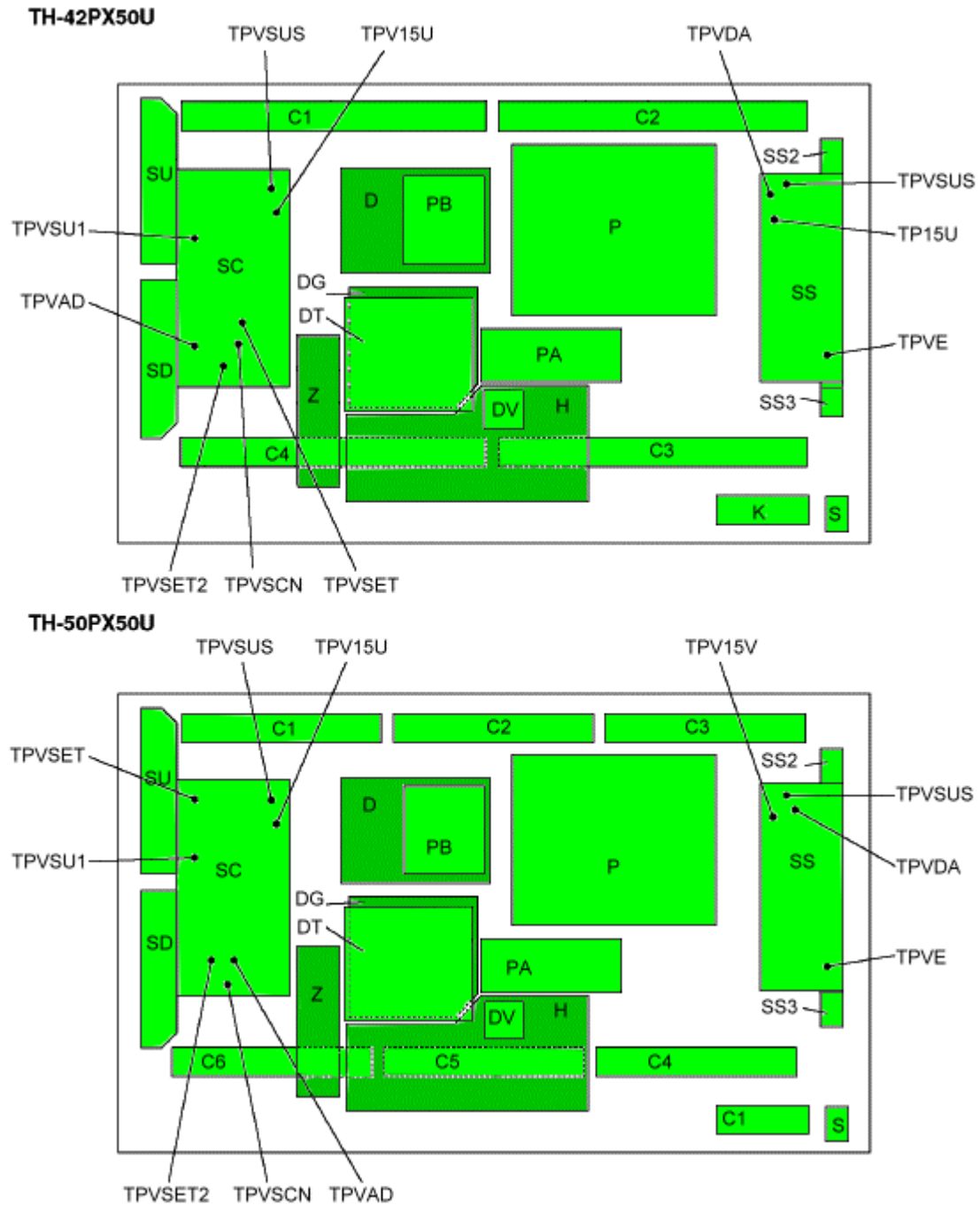


Figure 43. Test Point Location

Serviceman Mode and Adjustment procedure of the new panel

The GP8DU and GPH8DU chassis do not require Pedestal and White Balance adjustment after the replacement of the panel.

Note: The alignment procedure described in this section is for the repair of the GP6DU and GPH6DU chassis. There should be no attempt to use it for the servicing of the GP8DU and GPH8DU chassis.

Serviceman mode (Electronic Controls)

This Plasma Display television uses the I²C Bus circuitry to control functions and replace many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performed by using "On Screen Display Menu". (The **Serviceman Adjustment Mode**.)

Note: It is suggested that the technician reads all the way through and understand the following procedure for Entering/Exiting the **Serviceman Adjustment Mode**.

Entry to Serviceman Mode:

When minor adjustments need to be done to the electronic controls, the method of entering the serviceman mode is as follows:

Using the Remote Control:

1. Select SET-UP icon and select CABLE mode.
2. Select TIMER icon and set SLEEP time for 30 Min.
3. Press "ACTION" twice to exit menus.
4. Tune to Channel 124.
5. Adjust VOLUME to minimum (0).
6. Press VOL down **on the receiver**. Red "CHK" appears in the upper left corner of the screen.
7. Select an active station.

Note: If more than 30 minutes are needed after the receiver is in the SERVICEMAN mode, setting the TIMER back to NO can disable the Sleep Timer.

Caution: Prolonged display of patterns WILL cause an after image retention into the panel.

The Plasma Display receiver is now in Serviceman Mode.

- Press Power on the Remote Control to display the Serviceman Adjustment Menu.
- Press Power again on the Remote Control to exit the Serviceman Adjustment Menu.



Figure 44. Serviceman Menu

Exiting the Serviceman Mode:

Press the Power on the receiver (Not the remote) until the receiver turns off.

The unit momentarily shuts off (for about 5 seconds); then comes back on tuned to channel 3 with a preset level of sound.

Important note:

If the Action and Power buttons are used to exit the Serviceman mode, any programmed channels, channels caption data, and some other user-defined settings will be erased.

Note: To access NTSC or HDTV adjustments, set the receiver's input to the appropriate mode (TV or HDTV).

CAT (computer aided test) Mode

CAT mode menu

CAT Panel sys8.1	Mode	Function	Access Button
IIC Mode ◀	IIC	Service Alignment	Action
CD Mode ◀	CD (Complete Diagnostics)	Software Version Information EEPROM Edit	Mute More than 5 seconds
SD Mode ◀	SD (Status Display)	MTBF Parameter	Action
MS Mode ◀	MS Mode	Not used	-----
ID Mode ◀	ID	Not used	-----

Table 8. I²C Menu

How to access the CAT Mode

1. Enter the serviceman mode.
2. Select the OTHER (PSRVS).
3. Press the Action button on the remote.

To exit the **CAT** mode, access the **ID mode** and switch off the main power.

I²C Mode

Select the I²C mode by pressing the **Up/Down button** on the remote control from the front page of the CAT menu, and then press the **Action button** on the remote control.

Accessing the I²C mode?

OSD

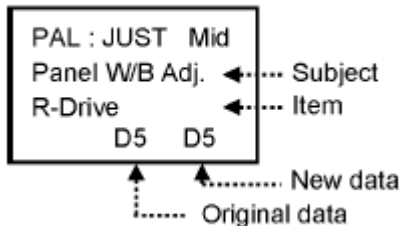


Figure 45

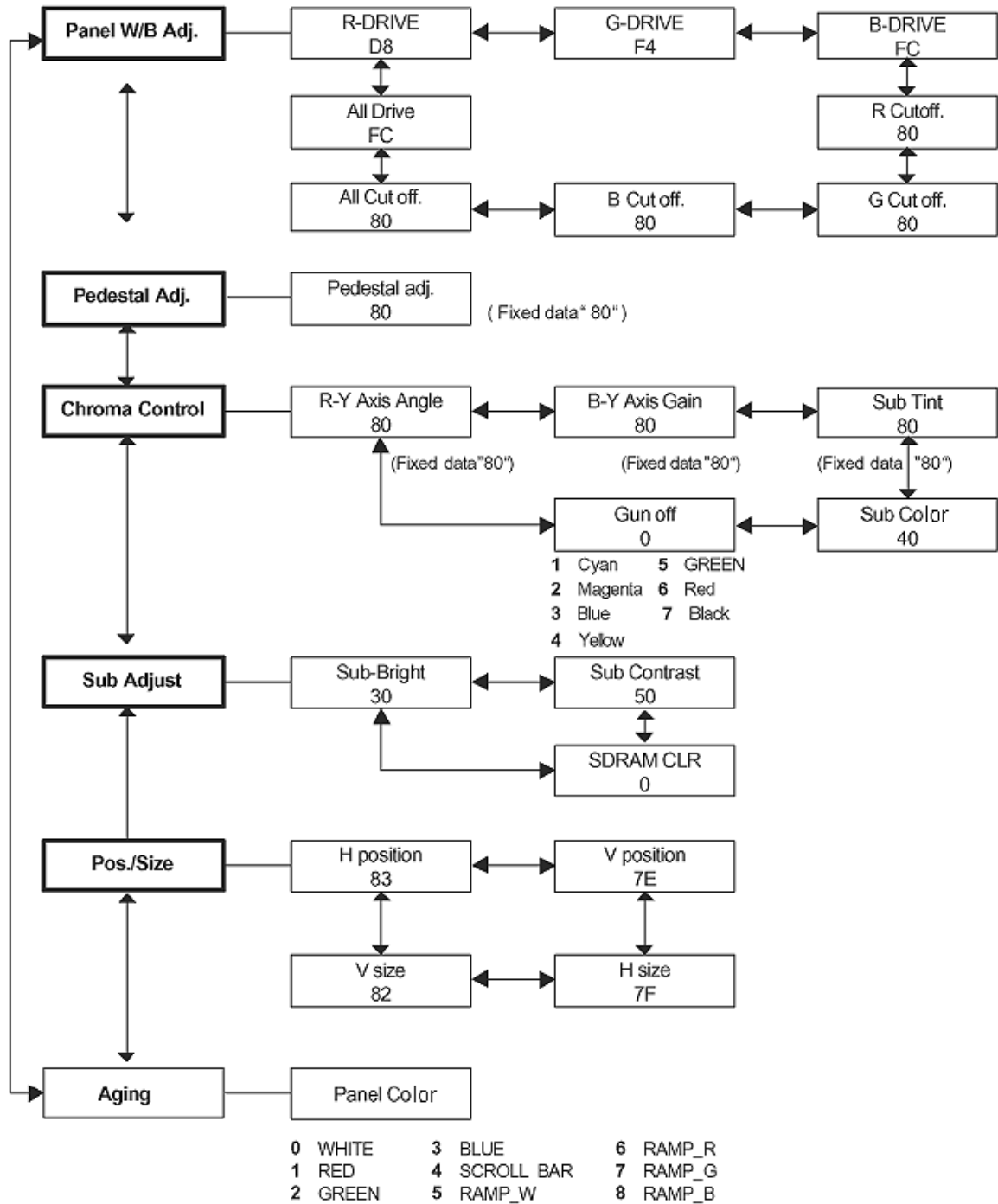
1. Select the alignment subject by pressing the **1 or 2 buttons** on the remote control.
2. Select the alignment item by pressing the **4 button** on the remote control.
3. Adjust the optimum setting by pressing the **Volume Up/Down buttons** on the remote control.

The data is memorized when you exit the I²C mode

To exit the I²C mode, press the **Recall** button on the remote control.

I²C Menu Structure

The values indicated in this flowchart are sampled data.



Use the Action button of the remote control to select the panel colors.

Figure 46

Alignment Procedures

The GP8DU and GPH8DU chassis do not require Pedestal and White Balance adjustment after the replacement of the panel.

The alignment procedure described in this section is for the repair of the GP6DU chassis. There should be no attempt to use it for the servicing of the GP8DU and GPH8DU chassis.

Pedestal Setting

Equipment required: RF Video Gray Scale Generator

Panel Settings; Picture = Normal, White Balance = Cool, Aspect Ratio = 16:9

Pattern Display:

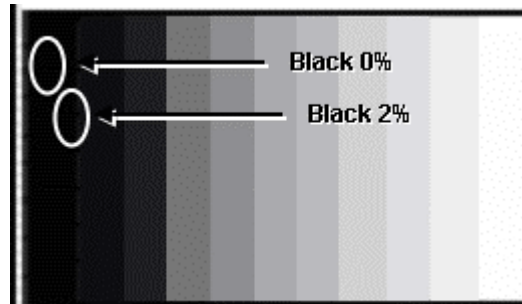


Figure 47. Adjustment Pattern 1

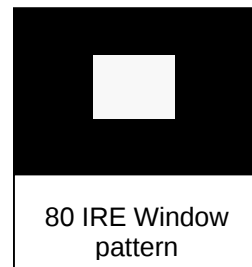
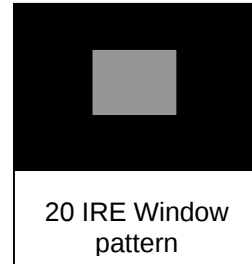
- Step 1- Access the R, G and B cutoff settings and set them to "80".
- Step 2- Under the Chroma Control setting, Set Gun off to "5" (Only green pixels emitting).
- Step 3- Access the RGB Sub Adjust, G Sub Bright setting and adjust G Sub bright so that green pixel emission starts at black 2% area and no emission occurs in the black 0% area.
- Step 4- Under the Chroma Control setting, Set Gun off to "3". (Only blue pixels emitting.)
- Step 5- Access the RGB Sub Adjust, B Sub Bright setting and adjust B Sub bright so that blue pixel emission starts at black 2% area and no emission occurs in the black 0% area.
- Step 6- Under the Chroma Control setting, Set Gun off to "6". (Only red pixels emitting.)
- Step 7- Access the RGB Sub Adjust, R Sub Bright setting and adjust R Sub bright so that Red pixel emission starts at black 2% area and no emission occurs in the black 0% area.
- Step 8- Change input to PC / RGB signal. Repeat procedure (1 to 7) using PC input signal.

NTSC White Balance Adjustment

Equipment required: NTSC Pattern Generator, Colorimeter

Panel Settings; Picture = Standard, Color Temperature = Cool, Aspect Ratio = 16:9

- Step 1- Using the Pattern generator; apply a 20 IRE Window pattern signal to the panel. Apply the color sensor to the panel and monitor the values.
Step 2- Adjust the Sub Bright Setting to 10 cd/m².
Step 3- Set the G Cutoff Setting Value to 80.
Step 4- Adjust the Red and Blue Cutoff settings to match the values in Table 1.
Step 5- Readjust the Sub Bright setting to 10 cd/m².
Step 6- Apply an 80 IRE window pattern signal to the Panel.
Step 7- Set the G Drive Setting value to E8.
Step 8- Adjust the Red and Blue Drive settings to match the values in Table 1.
Step 9- Reapply the 20 IRE pattern and 80 IRE patterns and verify that the drive and cutoff settings match the settings in Table 1, adjust as necessary.
Step 10- Adjust the All Drive Settings value to FC.
Step 11- Reapply the 20 IRE pattern and verify the light settings match the table below, adjust as necessary.



Color Temperature	X	Y
Cool (High)	0.276	0.276
Normal (Mid)	0.288	0.296
Warm (Low)	0.313	0.329

Table 9. Color Temperature Values

- Step 12- Press the R button then the Picture button on the remote control. Change the color temperature to Normal. Press the R button again then the Action button to re-access the IIC mode.
Step 13- Repeat steps 2 to 11 for Normal Color Temperature.
Step 14- Press the R button then the Picture button on the remote control. Change the color temperature to Warm. Press the R button again then the Action button to re-access the IIC mode.
Step 15- Repeat steps 2 to 11 for Warm Temperature.
Step 16- Change the Color temperature to Cool Mode, then re-adjust the Sub bright value to “30”.

HD Panel White Balance Adjustment

Equipment required: 720p/1080i Pattern Generator, Colorimeter

Panel Settings; Picture = Standard, Color Temperature = Cool, Aspect Ratio = 16:9

Step 1- Using the Pattern generator; apply a 20 IRE Window pattern signal to the panel. Apply the color sensor to the panel and monitor the values.

Step 2- Adjust the Sub Bright Setting to 10 cd/m².

Step 3- Set the G Cutoff Setting Value to 80.

Step 4- Adjust the Red and Blue Cutoff settings to match the values in Table 1.

Step 5- Readjust the Sub Bright setting to 10 cd/m².

Step 6- Apply an 80 IRE window pattern signal to the Panel.

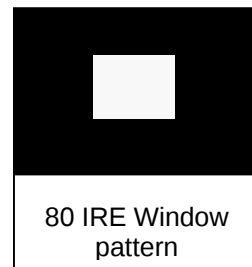
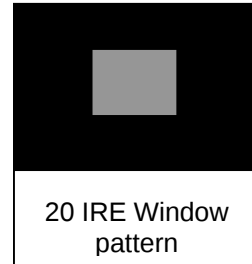
Step 7- Set the G Drive Setting value to E8.

Step 8- Adjust the Red and Blue Drive settings to match the values in Table 1.

Step 9- Reapply the 20 IRE pattern and 80 IRE patterns and verify that the drive and cutoff settings match the settings in Table 1, adjust as necessary.

Step 10- Adjust the All Drive Settings value to FC.

Step 11- Reapply the 20 IRE pattern and verify the light settings match the table below, adjust as necessary.



Color Temperature	X	Y
Cool (High)	0.276	0.276
Normal (Mid)	0.288	0.296
Warm (Low)	0.313	0.329

Table 10. Color Temperature Values

Step 12- Press the R button then the Picture button on the remote control. Change the color temperature to Normal. Press the R button again then the Action button to re-access the IIC mode.

Step 13- Repeat steps 2 to 11 for Normal Color Temperature.

Step 14- Press the R button then the Picture button on the remote control. Change the color temperature to Warm. Press the R button again then the Action button to re-access the IIC mode.

Step 15- Repeat steps 2 to 11 for Warm Temperature.

Step 16- Change the Color temperature to Cool Mode, then re-adjust the Sub bright value to "30".

Sub Brightness Setting

Equipment required: NTSC grayscale pattern Generator

Panel Settings; Picture = Normal, Aspect Ratio = 16:9

Pattern Display:

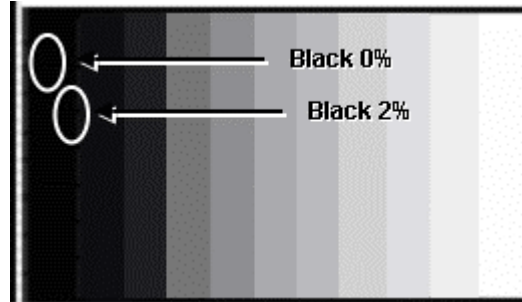


Figure 48. Adjustment Pattern 2

Note: Adjust in a Dark room.

Step 1- Set the white balance to Cool.

Step 2- Access the All cutoff setting in service mode and adjust so that pixel emission starts in the 2% area and there is no emission in the 0% area.

Step 3- Write down all cut off data.

Step 4- Set the white balance settings to Normal.

Step 5- Adjust all the cut off values to the same data values of the Cool mode settings.

Step 6- Set the white balance settings to Warm.

Step 7- Adjust all the cut off values to the same data values of the Cool mode settings.

Step 8- Change the pattern to HD and apply it to the to the component input.

Step 9- Copy PAL all cutoff data to HD Mode.

Examples of Defective Panels

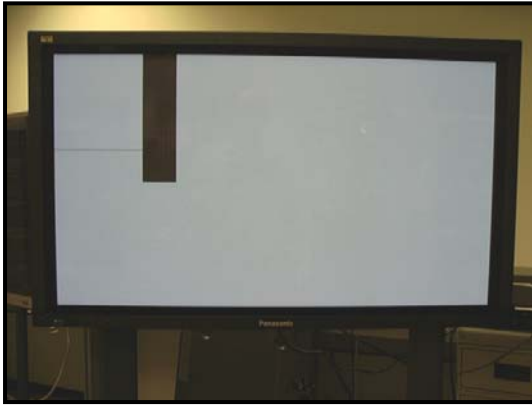


Figure 49

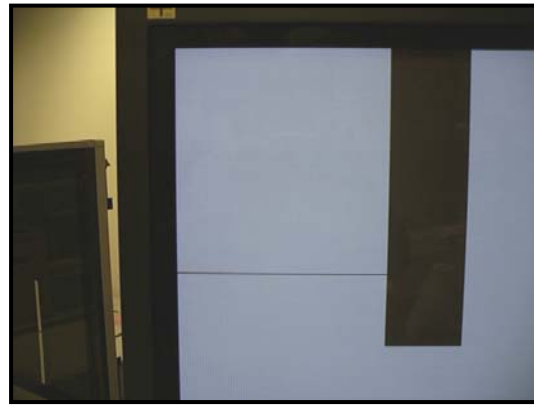


Figure 50

Figure 49 shows an example of a defective panel. Figure 50 is a close up of the same panel. The error shows an unlit vertical stripe and a smaller horizontal stripe. A defective C board can cause a vertical stripe of unlit pixels. However the combination of a vertical error stripe with a horizontal error stripe indicates the panel itself is defective.

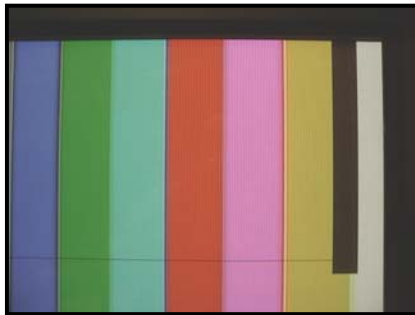


Figure 51

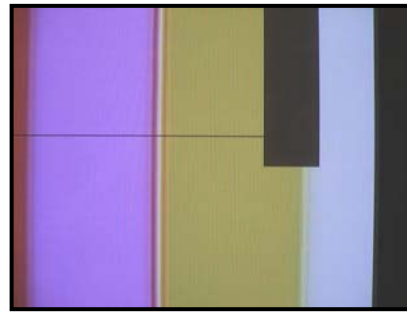


Figure 52

Figure 51 shows a similar error this time on the right side of the panel. Figure 52 shows a close-up view. Once again the error is a vertical error stripe combined with a horizontal stripe. The combination error is your clue that the panel is defective.



Figure 53

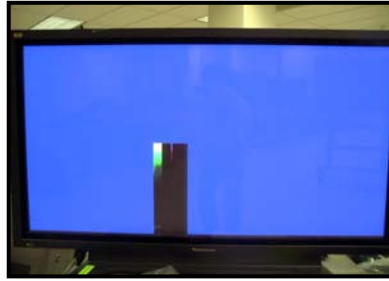


Figure 54



Figure 55

Another symptom of a defective panel is a blank vertical bar with all the pixels lit at the top. Figures 53 – 55 show this type error. Do not confuse this with a black vertical bar; a defective C board can cause that type of error.



Figure 56



Figure 57



Figure 58

A vertical bar with a thin line through it is another example of a defective panel. Figures 56– 58 show this type of defect.



Figure 59



Figure 60



Figure 61

Figures 59 – 61 show two defective areas in the panel, another example of a panel that must be replaced.



Figure 62

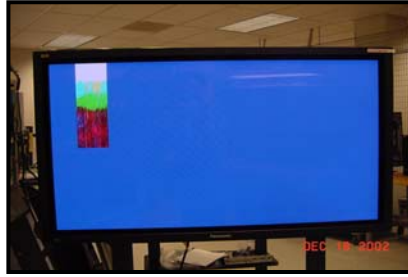


Figure 63

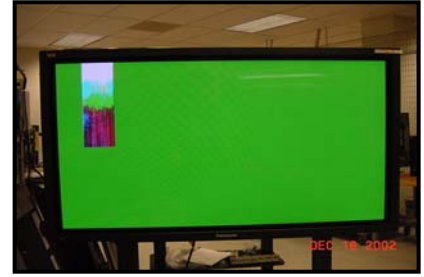


Figure 64

The wider defect area and the error change from top to bottom shown in figures 62– 64 indicate that the panel needs replacement.



Figure 65



Figure 66



Figure 67

Figures 65 – 67 are examples of a defective panel from a TH-42PW5UZ, a standard definition panel. The indication that this panel is defective is the second row of errors visible in Figure 65. This set of examples show why it is important to test the panel using Red, Green and Blue fields.

Note: TH-42PW5UZ and TH-37PW5UZ panels use C boards that drive the panel from the top to the bottom. All other panels use C boards that divide the screen in half, top to bottom. TH-42PW5UZ and TH-37PW5UZ panels with a defective C board will show a fault from top to bottom of the screen. All other models with defective C boards will show errors from top to middle or bottom to middle.



Figure 68



Figure 69



Figure 70

The wider error section in figures 68 – 70 is another example of a defective panel symptom.

If you are not sure if the panel is defective, contact PASC Technical Support. Digital pictures showing detailed examples of the error condition can be used to verify the condition of the panel. Pictures of the error with Red, Green and Blue fields applied are required.

Service Contact Information

Panasonic Customer Call Center	1-800-211-7262	
Tech Support Hotline	PTV and Digital Products 1-800-743-2335 (Authorized Service Centers only) All Other Products 1-800-572-2672 (Authorized Service Centers only access code required) Fax 1-800-348-7315 1-201-392-4207 Non-authorized (limited time access)	
Other Numbers	1-800-833-9626 1-201-392-4843 1-800-414-4408 1-877-924-2473 1-201-392-4281 Televisions	Parts Dept. Telephone PBX Systems Cellular Phones Massage Loungers Commercial MWO/Hotel